

REMARKS

By this Amendment, Applicant has amended claims 1, 3, and 5 to more appropriately define the invention, and have added new claims 15-33 to protect additional aspects of the invention. Applicant has cancelled claim 2, without prejudice or disclaimer of the subject matter thereof. Claims 1, 3-6, and 13-33 are pending. Claims 7-12 are withdrawn as directed to a non-elected invention.

In the Office Action, the Examiner rejected claims 1, 13, and 14 under 35 U.S.C. § 102(b) as anticipated by Kim et al. (U.S. Patent No. 5,392,232), and rejected claims 2-6 under 35 U.S.C. § 103(a) as unpatentable over Kim et al. in view of Matsuoka et al. (U.S. Patent No. 6,621,110).

The rejection of claim 2 is rendered moot in view of the cancellation thereof. Applicant respectfully traverses the rejections of the other claims.

Regarding the rejection of claims 1, 13, and 14 under 35 U.S.C. § 102(b), Applicant submits these claims are allowable because Kim et al. fails to teach each and every element of these claims.

Particularly, claim 1 recites, inter alia,

“a bit line extending in a first direction; . . . a plurality of first electrodes arranged in the first direction and electrically connected to the transistors; . . . wherein the dielectric film, the second electrode, and each of the first electrodes form one of a plurality of capacitors, wherein a width of the first electrode is smaller than a distance between adjacent first electrodes, and wherein an angle defined by a line parallel to the first direction and a line parallel to a longitudinal direction of each of the first electrodes is larger than 0° and smaller than 90°.”

The Examiner considered Kim et al.'s storage electrodes 38 as corresponding to Applicant's claimed "first electrodes," and Kim et al.'s bit line 32d as corresponding to Applicant's claimed "bit line." Office Action, p. 2. However, as shown in Fig. 2 of Kim et al., storage electrodes 38 do not have a longitudinal direction that forms an angle larger than 0° and smaller than 90° with the direction in which bit line 32d extends. Therefore, Kim et al. fails to teach at least "a bit line extending in a first direction; . . . wherein an angle defined by a line parallel to the first direction and a line parallel to a longitudinal direction of each of the first electrodes is larger than 0° and smaller than 90°," as recited in claim 1.

Therefore, claim 1 is allowable over Kim et al. Claims 13 and 14 depend from claim 1 and are also allowable at least because of their dependence from an allowable base claim.

The rejection of claims 3-6 under 35 U.S.C. § 103(a) is also improper, because Kim et al. and Matsuoka et al., taken alone or in combination, fail to teach or suggest each and every element of claim 1, from which claims 3-6 depend.

First, as noted above, Kim et al. fails to teach or suggest at least "a bit line extending in a first direction; . . . wherein an angle defined by a line parallel to the first direction and a line parallel to a longitudinal direction of each of the first electrodes is larger than 0° and smaller than 90°," as recited in claim 1.

Matsuoka et al. fails to cure the deficiency of Kim et al. The Examiner considered Matsuoka et al.'s contact plugs 22 as corresponding to Applicant's claimed "first electrodes." Office Action, p. 2. Applicant disagrees with the Examiner. As shown in Fig. 20 of Matsuoka et al., contact plugs 22 are not arranged in a direction of bit lines

20. Therefore, Matsuoka et al.'s contact plugs 22 cannot correspond to Applicant's claimed "first electrodes," which are "arranged in the first direction [of the bit line]," as required by claim 1.

Even assuming, arguendo, that Matsuoka et al.'s contact plugs 22 correspond to Applicant's claimed "first electrodes," Matsuoka et al. fails to teach or suggest that contact plugs 22 have a longitudinal direction that forms an angle larger than 0° and smaller than 90° with the direction in which bit lines 20 extend. As shown in Fig. 20, contact plugs 22 have a round shape and do not have "a longitudinal direction."

Therefore, Matsuoka et al. fails to teach or suggest at least "a bit line extending in a first direction; . . . a plurality of first electrodes arranged in the first direction . . . , wherein an angle defined by a line parallel to the first direction and a line parallel to a longitudinal direction of each of the first electrodes is larger than 0° and smaller than 90°."

In view of the above, Kim et al. and Matsuoka et al., taken alone or in combination, fail to teach or suggest each and every element of claim 1, from which claims 3-6 depend. Therefore, claims 3-6 are allowable under 35 U.S.C. § 103(a).

New claims 15-23 each depend directly or indirectly from claim 1 and are therefore allowable at least due to their dependence from an allowable base claim.

Each of new independent claims 24 and 33 is directed to a semiconductor device comprising a combination of features neither disclosed nor suggested by either Kim et al. or Matsuoka et al. Applicant therefore submits that new claims 24 and 33 and claims 25-32 that depend from claim 24 are allowable.

In view of the foregoing amendments and remarks, Applicant respectfully requests reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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By: 

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*With limited recognition under 37 C.F.R. § 10.9(b).